



## **Position Paper**

# **Regulatory Treatment of the Darwin to Katherine Transmission Line**

**April 2001**

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## Definitions

“Act”	means the <i>Electricity Networks (Third Party Access) Act 2000</i>
“Code”	means the <i>Electricity Networks (Third Party Access) Code</i> attached as a schedule to the Act, as amended
“Commission”	means the Utilities Commission established on commencement of the <i>Utilities Commission Act 2000</i>
“Darwin-Katherine Transmission Line”	means the 132 kV transmission line which extends from the network 132 kV bus at Channel Island Power Station to a 132/22 kV substation adjacent to the Katherine Power Station, with a 132/22 kV substation at Manton and a 132/66 kV substation at Pine Creek
“first regulatory control period”	means the period between commencement of the Code (on 1 April 2000) and 30 June 2003
“PAWA Networks”	means the business division of the Power and Water Authority of the Northern Territory with operating responsibility for the electricity networks owned by PAWA
“PAWA Retail”	means the business division of the Power and Water Authority of the Northern Territory with operating responsibility for the sale of electricity to final consumers
“Regulatory Minister”	means the Territory Minister responsible for the operation of the Act (currently the Treasurer)

**CHAPTER****1****BACKGROUND**

1.1 In February 2001, the Commission released a paper (the “Issues Paper”) addressing regulatory issues arising on account of the acquisition of the Darwin-Katherine Transmission line (DKTL) by the Power and Water Authority (PAWA).

1.2 In response to an open invitation contained in the Issues Paper, submissions were received from PAWA and the NT Power Group (NTPG)<sup>1</sup>. This paper presents the Commission’s analysis of – and final position regarding – the matters raised in the Issues Paper and/or canvassed in the submissions received.

1.3 Two steps remain before the decisions implied in this paper can be formalised and implemented.

1.4 First, PAWA is required to provide the data necessary to enable the Commission to determine the additional revenue caps, and to approve the associated network tariff adjustments. The Commission expects to be in a position to indicate its draft determination and in-principle approval by 1 May 2001.

1.5 Secondly, legislative amendments are necessary to include the DKTL within the regulatory regime and the Regulatory Minister must prescribe the DKTL as part of the regulated network. The draft determination and in-principle approval expected by 1 May 2001 cannot be formally ratified by the Commission – or take effect – until the legislative amendments are enacted and the DKTL’s prescription takes place. Indications are that these formalities may not be completed until July 2001.

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<sup>1</sup> The Commission notes that the NTPG has made its submission, not only as a network user, but also as the former owner and operator of the DKTL and now as the maintenance service provider for the first two years of PAWA’s ownership of the line.

**CHAPTER****2****THE DKTL AND THE NETWORK REVENUE CAPS****Relevant regulatory issues**

2.1 The Code sets a limit – for each regulated network – on the maximum aggregate revenues that may be collected from network users each year (the revenue cap).

2.2 In particular, network revenues are capped at the sum of ‘efficient’ capital and operating costs (including any allocation of overhead costs). Efficient capital costs include a fair return *on* the capital invested in the assets required to provide the services (the “regulated rate of return”) and a return *of* that capital over time. Efficient operating costs take into account the services provided and an estimate of the level of efficiency that may reasonably be expected of the provider.

2.3 The main issues associated with incorporating the DKTL into the revenue cap arrangements are:

- (1) the appropriate value to be used for the additional (DKTL) assets employed;
- (2) whether any adjustment to the regulated rate of return is required to take account of the nature of the line as a transmission, as opposed to a distribution, asset; and
- (3) the ‘efficient’ additions to be made to depreciation and operating costs.

**Appropriate DKTL asset value****Issues under consideration**

2.4 The value of regulated assets is fundamental to the calculation of the regulated return on – and of – capital. The use of appropriate asset values is intended to protect network users from the costs of poor investment decisions and over-building by network providers.

2.5 The principal issue here is the asset value to be included in the revenue cap calculation with respect to the DKTL.

2.6 The Code requires that network assets acquired after commencement of the Code (during the first regulatory control period) are to be valued at cost.<sup>2</sup> Departure from 'cost' is permitted for regulatory purposes when PAWA's assets are revalued at the commencement of the next regulatory control period (expected to be the five year period commencing 1 July 2003).<sup>3</sup> Until then, the Commission is obliged to value the DKTL assets 'at cost'.

2.7 However, valuing the DKTL assets at cost does not necessarily mean that the appropriate value for regulatory purposes is the \$43 million purchase price.

2.8 At issue for the Commission is not whether the purchase price was sufficiently at arms' length or whether the price paid reflects the line's replacement value – both ruled out for the moment by provision of the Code – but whether the \$43 million figure includes payment for considerations in addition to the purchase of the transmission assets making up the line itself.

2.9 In acknowledging that PAWA "...paid a little more than replacement value"<sup>4</sup>, the Government indicated that:

- the transaction was part of a legal settlement;
- legal costs associated with an unfinished court case might be avoided; and
- certain 'hidden costs' in the form of the time and 'distraction' of senior public servants involved in the court case and settlement negotiations could also be avoided.

2.10 Clearly, these additional 'settlement benefits' represented a real value to the Government and need to be somehow quantified in order to establish an underlying cost price on the DKTL assets themselves.

2.11 Much depends on whether these settlement benefits are ultimately to the benefit of network users alone (in which case users should pay for them as they should for the assets themselves) or whether the beneficiaries of these 'settlement benefits' include other power consumers as well or indeed whether

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<sup>2</sup> See para. 5(5) of Schedule 7 to the Code.

<sup>3</sup> Under the Code, revaluations for regulatory purposes (for subsequent regulatory control periods) are to be undertaken on a basis approved by the Commission. Possible approaches are:

- valuing the service capacity that is expected to be required over the life of the line at current efficient replacement costs, which would currently involve the use of a depreciated optimised replacement cost (DORC) value; and
- assessing the costs that would be incurred by market participants if the service provided by the line was not available.

<sup>4</sup> Hansard: *Parliamentary Record No.26, 28 November 2000*, Minister for Essential Services, Ministerial Statement – PAWA's Purchase of Darwin to Katherine Transmission Line.

the Territory taxpayers are the real beneficiaries (and therefore should be the ones directly bearing any cost).

### **Submissions by interested parties**

2.12 Submissions received argued that it was difficult to put precise values on the settlement benefits.

2.13 Rather than directly quantify the value of the settlement benefits and calculating the value of the DKTL itself as the residual, PAWA instead proposed that the DKTL be directly valued with the settlement benefits being estimated as a residual. To that end, PAWA advised the Commission that it was in the process of gaining an independent valuation of the line.

2.14 As to the settlement benefits themselves:

- PAWA noted that \$300,000 of the price was seen as a waiver of NTPG's use of the line from 1 April to 1 October 2000, being the time that the Commission initially did not allow recoveries of the line; and
- NTPG pointed out that the future power station site located at Channel Island Power Station was not purchased, as mentioned by the Commission in the Issues Paper, but negotiated as a long term lease.

2.15 Only NTPG commented on who should pay for the settlement benefits, and whether it should be network users, power consumers generally or Territory taxpayers. NTPG suggested that the settlement benefits be funded from consolidated revenue rather than by network users themselves.

### **Commission's analysis and final position**

2.16 The Commission recognises the intangible nature of many of the settlement benefits, and concedes that these are difficult to quantify.

2.17 On the basis that PAWA has undertaken to directly cost the DKTL assets, the Commission is prepared to accept that this direct costing approach may be the most practical approach in the circumstances. This approach also has the advantage of reducing or eliminating the potential for price shocks at the next regulatory reset.

2.18 The Commission will therefore accept the outcome of the independent valuation, provided it is undertaken:

- in accordance with generally accepted valuation principles for regulatory purposes; and
- the resultant value assigned to the settlement benefits appears to be reasonable from the Commission's perspective.

2.19 The Commission also considers that the settlement benefits should be to the account of Territory taxpayers rather than the network users, on the grounds that the settlement was motivated primarily to minimise future costs

on the Territory taxpayer. The Commission will give effect to this decision by only allowing the cost of the DKTL's physical assets to be incorporated into the regulated asset base for the purpose of calculating the relevant revenue caps.

## Depreciation

### Issues under consideration

2.20 The building blocks approach also allows a return *of* capital (depreciation).

2.21 The Commission's usual approach to depreciation would see adoption of the value of the economic life of the DKTL consistent with comparable transmission assets in other jurisdictions, and use of the straight-line depreciation method.

2.22 There may be climatic factors which should be taken into consideration, or there may be other reasons why the economic life of the DKTL could be less than the remaining physical life of the assets involved.

### Submissions by interested parties

2.23 As to the life of the DKTL assets:

- PAWA suggested a life of between 40 and 50 years; and
- NTPG suggested that factors such as geographical location and sparse population could increase the asset life to between 50 and 60 years.

2.24 Neither submission expressed a view on the current the debate which has recently been initiated by the Australian Competition and Consumer Commission (the ACCC) – as the regulator of electricity transmission prices in the national electricity market (the NEM) – over the measurement of depreciation for regulatory purposes.

### Commission's analysis and final decision

2.25 As the current regulatory period is in mid term, the Commission does not consider now to be the right time to be contemplating any substantive change in the method of calculating depreciation. This is a matter more appropriately dealt with in the lead up to the next regulatory reset. By that time too, progress might have been made in the ACCC-initiated debate over the measurement of depreciation for regulatory purposes.

2.26 Therefore, the Commission will continue to apply the straight-line depreciation method for calculating depreciation expense for the DKTL. This approach is in line with the current regulatory treatment of PAWA's other network assets.

2.27 The Commission will accept the independent valuer's estimates of the economic lives of the DKTL assets, provided those estimates are appropriately reconciled with the average lives used for similar assets in other jurisdictions.

## WACC adjustment

### Issues under consideration

2.28 The next issue for the Commission is whether to adjust PAWA's regulated rate of return – being based on an assessment of PAWA's weighted-average cost of capital (WACC) – for differences in business risk arising from including the transmission business along with PAWA's existing distribution businesses.

2.29 In a determination to have effect for three years commencing 1 July 2000, the Commission has allowed PAWA to earn 7.94% on a real-terms, pre-tax basis on its distribution assets. This rate was selected following an analysis of risk-adjusted rates of return in comparable industries.<sup>5</sup> A key issue to be determined is whether the level of undiversifiable risk for PAWA Networks is materially affected by the inclusion of the DKTL within its asset base.<sup>6</sup>

2.30 Factors causing business risk to increase may be associated with the characteristics of the line and the prospect that technology and market changes may reduce the economic attractions of using the line over time. Generators connected to the line may relocate, and mines supplied by the line may close down.

2.31 Factors causing business risk to fall may be associated with integration of distribution and transmission operations.

### Submissions by interested parties

2.32 Both submissions favoured holding the WACC at the same level as that allowed for PAWA's existing network assets.

2.33 In taking this position, PAWA however reserved the right to argue, at the next regulatory reset, that DKTL revenues may suffer uncertainty due to the risk characteristics of the major loads (e.g. mines) connected directly to the DKTL.

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<sup>5</sup> Utilities Commission, *Revenue Determinations 2000-01 to 2002-03*, June 2000.

<sup>6</sup> Strictly speaking, at issue is whether the asset beta applicable to transmission assets in the NT context is materially different to that applicable to distribution assets. The beta term is a measure of expected volatility of the return on an investment in a particular firm relative to the market as a whole. Beta measures the risk that is particular to that firm and that cannot be eliminated through diversification. The total risk of a business activity can be separated into two distinct classes of risk, being undiversifiable and diversifiable risk. Basically, undiversifiable risk (known as beta) relates to the correlation between the riskiness of an entity compared to the market as a whole.

## **Commission's analysis and final decision**

2.34 The Commission considers that there may be grounds for arguing that investment in the DKTL transmission assets are – on balance (and in contrast with the typical case in other jurisdictions) – inherently (slightly) more risky than the investment in distribution assets in the Top End.

2.35 As submissions have not argued this point, however, the Commission will use a WACC at the rate currently applicable to PAWA's other network assets. The effect of this approach is to see any higher risks being absorbed by PAWA – rather than network users – for the time being.

2.36 A more detailed analysis of this issue will be undertaken in the lead-up to the next regulatory reset.

## **Operating costs**

### **Issues under consideration**

2.37 The building blocks approach also allows a return of network operating costs.

2.38 On expected operating costs and any overhead allocation on account of the addition of the DKTL to PAWA's network operations, the Commission's usual approach is to seek cost information from PAWA Networks and to consider whether it is necessary to review such costs against appropriate efficiency benchmarks.

2.39 Under the settlement conditions, NTPG (as the original owner) was contracted to maintain the line for a two year period.

2.40 At issue is whether the actual operating costs to be borne by PAWA for the DKTL should be used, or whether there are grounds for believing that efficient costs may be lower than these actual costs.

### **Submissions by interested parties**

2.41 PAWA's submission noted that NTPG, as the maintenance service provider, is likely to have specialised equipment for maintenance at low cost. In the short term, PAWA conceded that NTPG's costs should be lower than might be the case were PAWA to undertake these activities itself. On these grounds, PAWA argued that it should be allowed a return of the actual operating costs, although it noted that these issues would be investigated further at the next regulatory review period.

2.42 NTPG submitted that it expected to undertake its operating and maintenance activities in accordance with industry benchmarks.

## Commission's analysis and final decision

2.43 The Commission accepts there are grounds for believing that the DKTL's operating costs will be lower under the arrangement with NTPG over the next two years than if PAWA undertook these activities itself.

2.44 The Commission will allow a return of the (expected) actual costs over the next two years. It will return to this issue on expiry of the current arrangement, and in the context of a more general assessment which the Commission plans to undertake of PAWA Network's operating costs in the lead up to the next regulatory reset (and once PAWA has attained the financial improvement targets set by the Territory Government in 1999).

## Incorporating DKTL into the revenue cap

### Issues under consideration

2.45 Schedule 9 of the Electricity Networks (Third Party Access) Code provides that revenue caps for second and subsequent full financial years of the current regulatory control period are to be determined in a manner consistent with the following general formula:

$$[A + b*B + c*C \dots + \dots n*N] * [1 + (CPI - X)] + K \quad \dots(1)$$

where:

A is the revenue cap (in \$) established by the regulator a year earlier for the preceding financial year;

B is the total amount of additional electricity (in MWh) which it is forecast will be transported by the network provider over the network during financial year "t";

b is dollars per MWh;

C is the additional length of network (in kilometres) which it is expected will be in service during financial year "t";

c is dollars per circuit kilometre;

N is a general term for the expected change in the value of other relevant cost drivers during year "t";

n is dollars per units relevant to the variable in N;

CPI is the forecast annual percentage change in the consumer price index for the year in question;

X is the efficiency gains factor (as a percentage) determined by the regulator in accordance with Schedule 10; and

K is a correction factor (in \$) for the year in question (for subsequent financial years in a regulatory control period) allowing for the fact that the revenue cap set for the previous year may have been calculated using unit sales, length of line and CPI increases based upon incomplete or inaccurate information.

2.46 In its report explaining the determination of the revenue cap for 2000-2001 and the 'X' factors to apply in 2001-02 and 2002-03 ("the June 2000 Report"), the Commission chose to apply the following reformulation of equation (1):

$$\text{MAR}_1 = [\text{MAR}_0 + b_0 * B_1] * [1 + (\text{CPI}_1 - X)] \quad \dots(2)$$

where:

$\text{MAR}_0$  is the revenue cap established by the regulator for the preceding financial year (in \$);

$b_0$  is average price of transporting electricity in the previous year, calculated by dividing the previous year's MAR by the total amount of electricity transported in that year (in cents per KWh);

$B_1$  is the total amount of additional electricity which it is forecast (on a trend basis) will be transported by the network provider over the network during financial year compared with the amount transported in the previous year (in KWh);

$\text{CPI}_1$  is the forecast annual percentage change in the consumer price index for the year in question; and

X is the adjustment factor (as a percentage) determined by the regulator at the beginning of the regulatory control period in accordance with Schedule 10.

2.47 Against this background, the Commission is faced with two possible ways of incorporating the DKTL into PAWA's network revenue caps:

- (1) by recalculating the  $\text{MAR}_0$ ,  $b_0$  and X factors in equation (2) to include the DKTL; or
- (2) by utilising the correction factor, or K term, in equation (1) to allow for the additional revenue for the DKTL.

### **Submissions by interested parties**

2.48 PAWA supported the treatment of the DKTL as an independent asset until the next regulatory reset, implying support for the use of the K term in equation (1) to allow for the additional revenue for the DKTL.

2.49 NTPG preferred consolidating the DKTL into the PAWA asset base, implying a preference for recalculating the  $\text{MAR}_0$ ,  $b_0$  and X factors in equation (2) to include the DKTL. NTPG considered that this would send the right signals to future users, both upstream and downstream. NTPG also submitted that this incorporation would benefit existing users of the line.

### **Commission's analysis and final decision**

2.50 The Commission has determined that the additional revenue allowed to PAWA Networks following the purchase of the DKTL will be incorporated into the existing revenue control regime through the utilisation of the K term

provided in the Code. The Commission considers this approach to be the most practical and transparent way of introducing the change to the revenue cap to account for the DKTL.

2.51 In approving PAWA's network access tariffs applicable from 1 October 2000, the Commission approved the combining of the revenue caps determined previously by the Commission for PAWA's Darwin and Katherine networks. This was for the purpose of establishing tariffs and charges for the use of the Northern Grid (that is, the inter-connected Darwin and Katherine distribution networks). In line with this decision, revenue caps for the 2001-02 and 2002-03 financial years will be calculated for the Northern Grid.

2.52 In particular, for both the 2001-02 and 2002-2003 financial years, the revenue cap for the Northern Grid, including the DKTL, will be calculated according to the following formula:

$$CAP_{\text{North}} = CAP_{\text{Darwin}} + CAP_{\text{Katherine}} + \Delta CAP_{\text{DKTL}} \quad \dots(3)$$

where:

$CAP_{\text{Darwin}}$  is the revenue cap for the Darwin network, calculated in accordance with equation (2) and using the  $MAR_0$ ,  $b_0$  and X factors determined in the June 2000 Reports;

$CAP_{\text{Katherine}}$  is the revenue cap for the Katherine network, calculated in accordance with equation (2) and using the  $MAR_0$ ,  $b_0$  and X factors determined in the June 2000 Report; and

$\Delta CAP_{\text{DKTL}}$  is the increase in PAWA's Northern Grid revenue caps on account of inclusion of the DKTL, calculated in accordance with the methodology set out below.

2.53 The DKTL component of the revenue cap for the Northern Grid in respect of a particular financial year will be calculated using the building block approach as specified in the Code as follows:

$$\Delta CAP_{\text{DKTL}} = (\Delta \text{CAPITAL} * \text{WACC}) + \Delta \text{DEP} + \Delta \text{OMA} \quad \dots(4)$$

where:

$\Delta \text{CAPITAL}$  is the DKTL asset value (\$M);

WACC is the real-terms pre-tax weighted-average cost of capital (%);

$\Delta \text{DEP}$  is the expected increment to the depreciation charge for the period on account of the depreciation of the DKTL assets (\$M); and

$\Delta \text{OMA}$  is the expected increment of the operations, maintenance and administration expenditure for the period by the network business on account of the DKTL (\$M).

and:

$$\Delta \text{CAPITAL} = [(\Delta \text{VALUE} + 0.5 * \Delta \text{CAPEX}) * (1 + \Delta \text{PI})^{-1/2}] \quad \dots(5)$$

where:

$\Delta$ VALUE is the estimated depreciated value of the DKTL assets at the beginning of the financial year (\$M);

$\Delta$ CAPEX is the increment in capital funds that are expected to be expended in the financial year in connection with the replacement or upgrading of DKTL fixed assets (\$M); and

$\Delta$ PI is the forecast change in an appropriate price index for the financial year (%).

2.54 The usual terms relating to working capital, capital contributions and the value of assets expected to be decommissioned in the financial year before the end of their economic life are not shown in equation (5), as it is expected that purchase of the DKTL will not involve any addition in the amounts previously advised by PAWA and incorporated into the existing revenue caps.

2.55 For this purpose, the Commission will use the WACC and  $\Delta$ PI determined for PAWA's distribution networks and published in the June 2000 Report, to ensure consistency within the regulatory period.

## CHAPTER

## 3

**THE DKTL AND THE STRUCTURE OF NETWORK PRICES****Relevant regulatory issues**

3.1 Besides imposing revenue caps, the Code also includes regulatory oversight of the structure of network tariffs. This reflects the fact that network tariffs, besides recovering the revenue required to maintain the viability of the network business, also provide important signals to electricity market participants.

3.2 The network tariffs approved by the Commission from 1 October 2000 included the recovery of PAWA's then DKTL costs through a surcharge that shared the DKTL cost across all users of the distribution part of the network in proportion to their use of the (inter-connected) system irrespective of their primary source of power. The Commission endorsed this approach principally on the grounds that it gives rise to a competitively neutral outcome.

3.3 In particular, the Commission approved the incorporation of a 0.474 ¢/kWh surcharge in the peak and off-peak energy charge components of the Northern grid network tariff, to be paid by all customers connected to the Darwin-Katherine system irrespective of their supplier. PAWA Networks based this surcharge on an estimate of its DKTL costs in 2000-01 of \$5.287 million.

3.4 The DKTL surcharge was therefore bundled up with the existing distribution use-of-system (DUOS) tariff, rather than being separately identified as a transmission use-of-system (TUOS) tariff.

3.5 Notwithstanding the DKTL surcharge's incorporation into the existing distribution tariff, the structure of the DKTL surcharge so incorporated differed from the structure approved for the tariffs relating directly to PAWA's distribution network.<sup>7</sup> PAWA's network tariffs for contestable customers involve

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<sup>7</sup> PAWA has established the level of its existing network tariffs by application of the fully distributed cost (FDC) principles and methodology summarised in its approved Pricing Principles Statement (Power and Water Authority, *Network Pricing Principles*, August 2000).

a standing charge as well as both demand and energy related components. This tariff is designed, among other things, to signal to customers that demand carries responsibility for system capacity and hence cost, and to provide incentive to customers to manage their demand on the system. Network tariffs for non-contestable customers consist of a standing charge and an energy charge only, although the energy charge includes a component to reflect demand.

3.6 Against this background, the issues that the Commission has taken into consideration when establishing how the DKTL is to be incorporated into the network pricing arrangements are:

- (1) whether the DKTL should be charged separately, involving a 'transmission tariff' distinct from being incorporated into the existing distribution tariffs; and
- (2) what structure – either implicit or explicit – the recovery of DKTL revenues should take, in particular the relative weight to be given to fixed, demand, capacity and volume components and to locational signals.

3.7 The first set of issues relates to how costs should be allocated among alternative groups of customers. The second relates to the translation of allocated costs into network prices.

3.8 Both sets of issues pivot on views about the nature of the DKTL itself.

## **Role of a separate transmission tariff**

### **Issues under consideration**

3.9 Incorporating the DKTL into PAWA's network pricing raises the question of whether a separate transmission price category should be established. This would be the equivalent of the existing DKTL surcharge being separately identified (and paid) as a TUOS tariff.

3.10 The existing DKTL surcharge on distribution tariffs reflects the constraints imposed by the previously unregulated status of the DKTL. With the DKTL becoming a regulated network asset, the Commission is able to consider whether the DKTL should continue to be absorbed into the existing distribution tariff structure or unbundled from the existing DUOS and charged separately.

3.11 The main services provided by PAWA as a network provider are:

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PAWA's approved Pricing Principles Statement gives practical expression to the Code's pricing objectives. That is, the Statement indicates how, in practice, PAWA undertakes network pricing such that the regulator and consumers can have confidence that the pricing objectives set by the Code will be achieved.

- connection services – either new or ongoing – relating to exit and entry services and facilities at the point of physical interconnection with the networks which are dedicated to a user (where ‘entry assets’ refer to connection assets for generators and ‘exit assets’ are those for end users);
- common services, relating to ancillary services such as control system services (e.g. system control centres, supervisory control and communications facilities) and voltage control services in the networks; and
- use of the network system (use of system services).

3.12 As a network provider, PAWA has a choice as to which of these services are charged for individually and the extent to which the charging for various services may be grouped or ‘bundled’ together. In making these choices, PAWA must also decide the assignment of such tariffs between the different groups of network users, notably generators and end-use consumers.

3.13 The separate pricing of transmission and distribution services in most regulatory regimes essentially reflects a judgment that transmission price signals are of sufficient importance to the effectiveness of the market to warrant a separate analysis. However, most customers are connected at the distribution level, and therefore receive a ‘bundled’ network tariff incorporating both TUOS and DUOS tariffs.

3.14 The division of electricity networks into (high voltage) *transmission* and (lower voltage) *distribution* components reflects important operational and economic factors:

- the transmission network usually forms the backbone of the interconnected electricity system (or grid) – control of the transmission network is essential to the stability and security of the power system; and
- by providing the primary link between remote generation and areas of load, the availability and cost of transmission can be a key determinant of the effectiveness of the electricity market in meeting end users’ energy service needs efficiently.

3.15 In recognition of these factors, it is common (though not essential) for the provision, pricing and regulation of transmission services to be handled separately from distribution.

3.16 A separate TUOS tariff would allow for pricing signals that are specific to the asset. This may lead to more efficient outcomes by avoiding the cost averaging that occurs in distribution pricing. Transmission usage charges could be employed to signal marginal costs to users at points on the line where these are material.

3.17 However, care would be needed to ensure that a separate TUOS tariff did not lead to inconsistencies in the treatment of market participants that were anti-competitive. In the relatively small Darwin/Katherine systems, some

network elements that would normally be classified on the basis of size as distribution assets may in practice operate more as transmission assets, by linking generation to load for example. It is equally important to deliver efficient price signals for these assets as for the DKTL.

3.18 The price signalling advantages of a separately constructed TUOS charge are reduced where congestion costs are low. In these circumstances, greater emphasis would be placed on setting prices to recover the allowed revenue in a manner that minimises distortions to consumption and investment. This objective may be more compatible with the cost averaging that occurs in distribution pricing, thereby diminishing the grounds for a separate transmission tariff.

3.19 To assess the pricing options, the Commission requires information on the level of use of the transmission line and the likelihood and magnitude of congestion costs. If an analysis of congestion costs indicates that these are unlikely to be relevant over a medium term timeframe, a separate TUOS tariff would appear to be unnecessary. This would not, however, preclude the introduction of such tariffs in the future, as and when indicated by usage levels.<sup>8</sup>

### **Submissions by interested parties**

3.20 PAWA's submission supported continuation of the current form of revenue collection, where the DKTL surcharge is incorporated into (that is, bundled with) the distribution tariffs. PAWA however reserved its position on this matter at the next regulatory reset.

3.21 By contrast, NTPG's submission suggested that a modified form of the current tariff should be adopted due to the fact that all network users benefit from the DKTL. In support of this, NTPG highlighted the role of the line, as well as the individual characteristics of the line. However, NTPG did not specify what these 'modifications' might involve.

3.22 There was also some comment from PAWA and NTPG in relation to whether the DKTL should be treated as a distribution or a transmission asset:

- PAWA was of the opinion that the DKTL could be treated as a distribution asset as it allowed for an increase in competition at the generation level, but also conceded that the line allowed for security of supply in the distribution industry;
- NTPG urged the Commission to treat the DKTL as a transmission asset; and

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<sup>8</sup> There are clearly areas of overlap between these pricing issues and the technical and economic judgments that will be required to reset the regulatory value of the asset prior to the next regulatory control period. In setting the asset value, judgments will be required on the service that the line provides, the optimal means of providing that service and whether and to what extent there is congestion, spare capacity or redundant capacity.

- PAWA argued, and NTPG agreed in principle, that the line offered flexibility and security of supply to all customers.

### **Commission's analysis and final decision**

3.23 Typically, in Australia, transmission assets are assessed individually for regulatory purposes, according to their operational characteristics.<sup>9</sup>

3.24 Transmission pricing arrangements can be a key component of the electricity market, affecting:

- the location and competitiveness of generators and customer loads;
- the efficient use of existing transmission assets and the economic benefits that result;
- decisions on where and when to invest in new transmission assets; and
- the ability of non-network alternatives, such as embedded generation and demand side management, to compete with network service providers.

3.25 Because of the potential importance which could be attached to a transmission tariff in future, the Commission has therefore decided that the DKTL costs should be recovered from network users through a separately scheduled transmission (TUOS) tariff unbundled from the scheduled distribution (DUOS) tariffs. This will make the transmission tariff more transparent, and provide a basis for further consideration of the role and structure of a transmission charge in the Darwin and Katherine markets.

## **Structure of a separate DKTL network tariff**

### **Issues under consideration**

3.26 The DKTL surcharge currently in place involves a flat (or “postage stamp”) 0.474 ¢/kWh surcharge in the peak and off-peak energy components of the Northern grid distribution tariff. Once again, this structure reflects constraints imposed by the previous unregulated status of the DKTL. With the DKTL becoming a regulated network asset, the Commission is able to consider whether any DKTL-specific tariff should have only an energy component or also demand and capacity components.

3.27 With respect to its nominated tariffs, the main tariff design issues facing PAWA as a network provider relate to:

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<sup>9</sup> The National Electricity Code provides for assets that operate between 66 kV and 220 kV in parallel to and provide support to the transmission network to be considered as part of the transmission network. The classification of other assets in this range is left to the relevant regulator to determine.

- the 'structure' of that tariff, involving the relative weights to be given to fixed and variable components and to demand and capacity charges in any variable component;
- the determination of the number and size of steps to include in its tariff structure;
- the extent of any time of use variations; and
- the inclusion or otherwise of locational (or zonal) variations.

3.28 It is the relevant proportions and method of application of these components of network prices that determine the effect of the prices on economic efficiency. The main guidance provided by economic principles is that network prices should be structured to reflect the key (marginal) cost drivers such as demand, capacity and volume.

3.29 Currently, the DUOS tariffs applying in the Darwin and Katherine networks involve a standing charge as well as both demand and energy related components with a declining block structure. Network assets are treated as forming a single regional distribution system (the Northern grid).

3.30 The issues worthy of the Commission's consideration in this area have been highlighted by the ACCC's recent review of transmission pricing arrangements in the National Electricity Market. To date, these arrangements require tariffs to be based on a combination of cost reflective network pricing (CRNP), which attempts to allocate asset costs to the users of those assets, and average pricing (postage stamping). Transmission usage tariffs are only levied on customers (offtakes). Generators (injections) only pay the cost of their connection to the system.

3.31 These arrangements have been criticised for not providing clear and consistent signals to all network users. Following a review by the National Electricity Code Administrator, a number of proposals for modifying the method of calculation have been submitted to the ACCC for authorisation. The ACCC has responded with a draft determination that, if implemented, will lead to significant changes in the approach to transmission pricing in the NEM.<sup>10</sup>

3.32 The Commission is concerned that the method of revenue recovery with respect to the DKTL:

- sends the appropriate signals for the economic use of the line;
- does not inhibit the competitive development of the market; and
- is consistent with the price signals provided by existing network charges.

3.33 It may be that there are some trade-offs to be made between these various goals.

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<sup>10</sup> Australian Competition and Consumer Commission, *Applications for Authorisation. Amendments to the National Electricity Code. Network Pricing and Market Network Service Providers*, 12 December 2000.

3.34 In conjunction with network users, PAWA and other interested parties, the Commission is required to address how the additional revenues available to PAWA for allowing access to the DKTL is best recovered as prices, who should pay and how should the prices relate to the prices that apply to other network assets.

### **Submissions from interested parties**

3.35 PAWA's submission supported continuation of the 'postage stamp' structure of the existing surcharge for the remainder of this regulatory control period. PAWA indicated that it wished to consider this matter further in the lead-up to the next regulatory reset.

3.36 As already mentioned, NTPG's submission suggested that a modified form of the current tariff should be adopted due to the fact that all network users benefit from the DKTL, although it did not specify what these 'modifications' might involve.

3.37 In relation to whether existing types of tariffs should include a high voltage element or as an averaged charge, NTPG's submission indicated a preference for an averaged charge, as the DKTL benefits all customers.

3.38 In contrast, PAWA indicated that all customers, at some level, used the high voltage lines. As these costs were either paid as a tariff at the connection location or passed down to the lower connection, PAWA saw little difference if an energy based charge were added.

3.39 In relation to the review of transmission pricing currently being conducted by the ACCC, all parties agree that it would only be possible and appropriate to incorporate resultant changes in the next regulatory review period.

3.40 As to the longer term:

- PAWA submitted that it did not accept in principle that locational signals were implicit in locational line losses, and that only differential losses would offer a locational signal and, of themselves, would not prove adequate;
- NTPG submitted that they agreed that line losses provided locational signals, thereby discouraging inappropriate siting of generation capacity; and
- PAWA noted that, in the next regulatory period, it would argue that generators should contribute to any infrastructure required to augment the capacity for the line, with respect to assets with a short term effective life.

3.41 The Commission sought comment on congestion on the line. Both submissions pointed out that, at this stage, congestion was not an issue. However, NTPG noted that there were limitations on transfer capacity and

PAWA noted that, under specific circumstances, there may be limitations on the utilisation of the line in specific situations.

**Commission’s analysis and final decision**

3.42 The Commission considers that there are strong arguments for retaining the postage stamp structure for any DKTL tariff. Competitive neutrality concerns remain paramount in the initial stages of competition in the Territory’s electricity market. Furthermore, more consideration of the influences on, and role of, transmission pricing in the Territory is required by all parties before moves away from postage stamp pricing could be justified.

3.43 The Commission will also benefit from progress expected over the next year or so in the national debate taking place over electricity network pricing.

3.44 On these grounds, the Commission has decided to retain the postage stamp structure for the DKTL tariff for the remainder of the current regulatory control period.